

1. A magnification loupe carried by a user wearable device,
comprising:
 - a housing having a first end with a first aperture for supporting
an eyepiece lens, and a second end with a second aperture for supporting
5 an objective lens;
 - an eyepiece lens disposed in said first end of said housing; and
 - an objective lens disposed in said second end of said housing;
 - said objective lens having a non-circular shape, wherein at
least two oppositely disposed first peripheral edges are defined by a first
10 radius extending from a first center, and wherein at least two oppositely
disposed second peripheral edges are defined by at least one second radius
extending from at least a second center not coincident with said first
center, said second radius having a length different from said first radius.
2. The magnification loupe of claim 1, wherein said second
peripheral edges are semi-elliptical in shape.
3. The magnification viewer of claim 1, wherein said eyepiece lens
comprises a single lens element, and wherein said objective lens comprises
two lens elements.
4. The magnification loupe of claim 3, wherein said eyepiece lens
and said objective lens are constructed and arranged according to the following
parameters:

Element	Glass	η_d	ν_d	Radius	Thickness	Diameter	Sep.
I	Schott NSK5	1.589	61.3	$R_1 = \infty$ $R_2 = \infty$	2.2	12.0	
II	Schott NBK7	1.517	64.2	$R_3 = 36.49$ $R_4 = 18.48$	1.5	12.0	$S_1 = 0.6$
III	Schott NSF56	1.805	25.4	$R_5 = 85.68$ $R_6 = 39.71$	1.6	$D_1 = 22.24$ $D_2 = 23.60$	$S_2 = 14.46$
IV	Schott NBK7	1.517	64.2	$R_7 = 39.71$ $R_8 = 21.55$	6.65	$D_3 = 23.60$ $D_4 = 23.60$	

wherein the radius, thickness, and separation dimensions are given in

- 5 millimeters; Roman numerals identify the lens elements in their respective order from the eyepoint side to the object side; η_d represents the refractive index of each element; ν_d is the abbe dispersion number; R_1 , R_2 , etc. represent the radii of the respective refractive surfaces in order, from the eyepoint side to the object side; D_1 , D_2 , etc. represent the diameter of the lens elements; and S_1 , S_2 represent the air space between the elements, measured along the optical centerline.
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5. The magnification loupe of claim 3, wherein said eyepiece lens and said objective lens are constructed and arranged according to the following parameters:

Element	Glass	η_d	ν_d	Radius	Thickness	Diameter	Sep.
I	Schott NSK5	1.589	61.3	$R_1 = 98.19$ $R_2 = 98.19$	3.0	25.4	
II	Schott NBALF4	1.580	53.9	$R_3 = 52.10$ $R_4 = 20.16$	1.5	$D_1 = 13.00$ $D_2 = 13.25$	$S = 4.1$
III	O'Hara STIH23	1.785	26.3	$R_5 = 85.68$ $R_6 = 43.17$	1.8	26.15	$S = 13.59$
IV	Schott NBK7	1.517	64.2	$R_7 = 43.17$ $R_8 = 22.39$	7.6	26.15	

wherein the radius, thickness, and separation dimensions are given in

5 millimeters; Roman numerals identify the lens elements in their respective order from the eyepoint side to the object side; η_d represents the refractive index of each element; v_d is the abbe dispersion number; R_1 , R_2 , etc. represent the radii of the respective refractive surfaces in order, from the eyepoint side to the object side; D_1 , D_2 , etc. represent the diameter of the
10 lens elements; and S_1 , S_2 represent the air space between the elements, measured along the optical centerline.

6. The magnification loupe of claim 1, further comprising a correction lens couplable to said housing proximate said first end.

7. The magnification loupe of claim 6, wherein said correction lens is interchangeably coupled to said housing, whereby said correction lens may be selectively removed from said housing and replaced with a different correction lens to thereby vary a working distance of the loupe.

8. The magnification loupe of claim 1, wherein said housing is configured for mounting through a lens of the spectacles.

9. The magnification loupe of claim 1, wherein said housing is configured to be mounted to the spectacles by a mounting member secured to a frame of the spectacles.

10. A magnification viewer, comprising:
 a user wearable device having a frame and at least one eyeglass
lens supported on said frame; and
 at least one magnification loupe operatively coupled to said user
5 wearable device, said magnification loupe comprising:
 a housing having a first end with a first aperture for
supporting an eyepiece lens, and a second end with a second aperture for
supporting an objective lens,
 an eyepiece lens disposed in said first end of said housing,
10 and
 an objective lens disposed in said second end of said
housing,
 said objective lens having a non-circular shape, wherein at
least two oppositely disposed first peripheral edges are defined by a first radius
15 extending from a first center, and wherein at least two oppositely disposed
second peripheral edges are defined by at least one second radius extending
from at least a second center not coincident with said first center, said second
radius having a length different from said first radius.

11. The magnification viewer of claim 10, further comprising a
correction lens interchangeably coupled to said housing proximate said first
end, whereby said correction lens may be selectively removed from said
housing and replaced with a different correction lens to thereby vary a working
5 distance of the loupe.

12. A magnification loupe carried by a user wearable device,
comprising:

a housing having a first end with a first aperture for supporting an
eyepiece lens, and a second end with a second aperture for supporting an

5 objective lens;

a single element eyepiece lens disposed in said first end of said
housing; and

a two element objective lens disposed in said second end of said
housing;

10 said eyepiece lens and said objective lens constructed and
arranged according to the following parameters:

Element	Glass	η_d	ν_d	Radius	Thickness	Diameter	Sep.
I	Schott NSK5	1.589	61.3	$R_1 = \infty$ $R_2 = \infty$	2.2	12.0	
II	Schott NBK7	1.517	64.2	$R_3 = 36.49$ $R_4 = 18.48$	1.5	12.0	$S_1 = 0.6$
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IV	Schott NBK7	1.517	64.2	$R_7 = 39.71$ $R_8 = 21.55$	6.65	$D_3 = 23.60$ $D_4 = 23.60$	

wherein the radius, thickness, and separation dimensions are given in

millimeters; Roman numerals identify the lens elements in their respective

order from the eyepoint side to the object side; η_d represents the refractive

15 index of each element; ν_d is the abbe dispersion number; R_1 , R_2 , etc.

represent the radii of the respective refractive surfaces in order, from the

eyepoint side to the object side; D_1 , D_2 , etc. represent the diameter of the

lens elements; and S_1 , S_2 represent the air space between the elements,

measured along the optical centerline.

13. A magnification loupe carried by a user wearable device,
comprising:

a housing having a first end with a first aperture for supporting an
eyepiece lens, and a second end with a second aperture for supporting an

5 objective lens;

a single element eyepiece lens disposed in said first end of said
housing; and

a two element objective lens disposed in said second end of said
housing;

10 said eyepiece lens and said objective lens constructed and
arranged according to the following parameters:

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millimeters; Roman numerals identify the lens elements in their respective
order from the eyepoint side to the object side; η_d represents the refractive

15 index of each element; ν_d is the abbe dispersion number; R_1 , R_2 , etc.

represent the radii of the respective refractive surfaces in order, from the
eyepoint side to the object side; D_1 , D_2 , etc. represent the diameter of the
lens elements; and S_1 , S_2 represent the air space between the elements,
measured along the optical centerline.